



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/521,987

01/21/2005

William D. Hanrahan

30101.177

1916

36845 7590 12/02/2009  
MICROBAN PRODUCTS COMPANY  
11400 VANSTORY DRIVE  
HUNTERSVILLE, NC 28078

EXAMINER

DICKINSON, PAUL W

ART UNIT

PAPER NUMBER

1618

NOTIFICATION DATE

DELIVERY MODE

12/02/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

CLIFF.WESTON@MICROBAN.COM  
patent@microban.com  
cust36845@microban.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/521,987	<b>Applicant(s)</b> HANRAHAN ET AL.	
	<b>Examiner</b> PAUL DICKINSON	<b>Art Unit</b> 1618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 12-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Applicant's arguments, filed 9/16/2009, have been fully considered but they are not deemed to be fully persuasive. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objects are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

#### ***Notes and Comments***

The previous grounds of rejection of claims 12-28 under 35 U.S.C. 103(a) as being unpatentable over US 6248342 ('342) in view of US 20030065192 ('192) has been withdrawn necessitated by Applicant's amendment. As '342 is used in a new grounds of rejection below, the Examiner would like to respond to Applicant's arguments.

Applicant argues (1) claims 12 and 20 do not disclose a second antimicrobial agent, (2) isothiazolone based compounds are water-insoluble and failure of the antimicrobial agent to remain distributed in the melamine bath negatively impacts uptake of the agent into the kraft paper, and (3) organic antimicrobial agents have functional groups susceptible to chemical reaction with the melamine, formaldehyde, and/or other catalysts and cross-linking agents.

The Examiner does not find these points persuasive for the following reasons:

Regarding (1), although two antimicrobial agents are not required by instant claims 12 and 20, the claims use open language to describe the contents

Art Unit: 1618

of the laminate (i.e. “comprising”). Accordingly, the laminate in instant claims 12 and 20 is open to unrecited components, such as a second antimicrobial agent.

Regarding (2), Applicant argues that isothiazolone based compounds would not be compatible in the specification’s method of making the laminate product because they give rise to phase partitioning considerations in the melamine bath. This is not persuasive because the claims under examination are directed to compositions and not methods of making. Further, Applicant’s arguments has no force because the statement that isothiazolone based compounds are water-insoluble is erroneous. The Examiner cites US 5591759 which teaches that isothiazolone based compounds are water soluble (see col 1, lines 19-29).

Regarding (3), ‘192 explicitly states that isothiazolone based compounds provide potent antimicrobial activity when added to a wide variety of textile products (see paragraph 8). To say that organic antimicrobial agents could interact with the melamine, formaldehyde, and/or other catalysts and cross-linking agent does not mean that they would do this. There is nothing on the record to support Applicant’s argument that isothiazolone based compounds would negatively react with melamine, formaldehyde, and/or other catalysts and cross-linking agent. Quite the opposite, the art suggests that these compounds may be incorporated into a wide variety of textile products which implies their universal applicability.

### ***Response to Arguments***

#### ***Claim Rejections - 35 USC § 112, Second Paragraph***

Art Unit: 1618

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The rejection of claims 12-19 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, is maintained.

Applicant argues the ordinary artisan would understand the scope of “high density fiberboard” and recognize working definitions of low-, medium-, and high-density as applied to fiberboard for laminate manufacture. Applicant cites US 5925211 (‘211) for support.

Applicant's arguments have been fully considered but are not found persuasive. The Examiner agrees that ‘211 discloses the terms low-, medium-, and high-density fiberboard. However, simply because “high density fiberboard” is contrasted with “low density fiberboard” and “medium density fiberboard” in the art does not indicate that these are terms of art. There is nothing in ‘211 that shows the scope of products encompassed by “high density fiberboard”. The skilled artisan would not understand what is the cut off between a “high density fiberboard” and a “medium density fiberboard”. It follows that the skilled artisan would not know when they are infringing on the claimed invention.

### ***New Grounds of Rejection***

#### ***Claim Rejections - 35 USC § 112, First Paragraph***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make

Art Unit: 1618

and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 12-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification and original claims, while disclosing "high density core fiberboard", do not explicitly disclose "high density fiberboard" nor provide a representative number of examples of this term. The Examiner interprets "high density core fiberboard" to be a fiberboard with a high density core. The term "high density fiberboard" is a fiberboard that is comprised entirely of high density materials.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

Art Unit: 1618

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 12-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6248342 ('342) in view of WO 9622023 (WO '023). '342 discloses a decorative laminate having durable antimicrobial properties comprising:

An overlay sheet impregnated with a melamine resin including a dispersion;

An inorganic antibiotic metal agent in said dispersion,

A printed paper sheet impregnated with a melamine formaldehyde; and

A high density fiberboard impregnated with a phenolic resin or a melamine resin (a substrate) (see col 1, lines 58-67; col 2, lines 56-67; Figure 1).

The inorganic antibiotic metal agent may be silver, copper or zinc zeolite (see col 5, lines 17-42). The inorganic antibiotic metal agent may be present in the laminate from about 0.01 to 20 wt% (see col 6, line 66 to col 7, line 4). This

Art Unit: 1618

compound corresponds to Applicant's "second antimicrobial agent" (see instant claims 13-14 and 22-23). There may be multiple layers of fiberboard (see col 2, line 65), which satisfies instant claims 15 and 24. The laminate is cured in a press at a pressure in the range of 3 to 30 MPa (430 to 4300 psi) and at a temperature in the range of 50 to 500 °C, preferably 100 to 250 °C. The laminate may be used as an eating surface (tabletop), which satisfies instant claim 21.

'342 fails to teach incorporation of an isothiazolone based antimicrobial agent.

'342 further fails to teach the pressure ranges, temperature ranges, and weight percentages disclosed in instant claims 16-19 and 25-28.

WO '023 discloses that 1,2-benzisothiazolin-3-one (an isothiazolone based compound) is a well known biocide (see page 1, lines 1-4). This compound is used for the protection of textile materials (see page 1, line 1 to page 2, line 35; Formula (I) where  $n = 0$ ).

It would have been obvious to one of ordinary skill in the art to incorporate a second antimicrobial agent into the laminate of '342, to improve the antimicrobial efficacy of the composition. Both the inorganic antibiotic metal agents disclosed by '342 and 1,2-benzisothiazolin-3-one are used for the same purpose (as antimicrobial agents), and it would be obvious to combine the two to improve the antimicrobial efficacy of the composition. "It is obvious to combine individual compositions taught to have the same utility to form a new composition for the very same purpose. In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980)." MPEP § 2144.06. It would have been further obvious to optimize the curing pressure, curing temperature, and weight percent



Art Unit: 1618

of the antimicrobial agent to improve the structural integrity and antimicrobial efficacy of the composition. In this way, one would find Applicant's claimed values through routine experimentation. The rationale for finding these values is that the pressure range taught by '342 of 430 to 4300 psi fully encompasses Applicant's range of about 1000 to about 1500 psi, the temperature range taught by '342 of 100 to 250 °C fully encompasses Applicant's ranges of about 170 to about 210 °C and about 190 °C, and the antimicrobial weight percentage range taught by '342 of 0.01 to 20 wt% fully encompasses Applicant's claimed ranges of about 0.1 to about 5 wt% and about 0.3 to about 1.0 wt%. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.' In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)" MPEP § 2144.05, II.

### **Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL DICKINSON whose telephone number is (571)270-3499. The examiner can normally be reached on Mon-Thurs 9:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Hartley can be reached on 571-272-0616.

Art Unit: 1618

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric E Silverman/  
Primary Examiner, Art Unit 1618

Paul Dickinson  
Examiner  
AU 1618

November 23, 2009